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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,834	10/11/2006	Erwin Rinaldo Meinders	NL 040449	5275

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EXAMINER

MULVANEY, ELIZABETH EVANS

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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02/25/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,834	Applicant(s) MEINDERS ET AL.	
	Examiner Elizabeth E. Mulvaney	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 12/2/09 have been fully considered but they are not persuasive. Applicant argues that the reference combination does not provide for a first and second dielectric layer formed between the substrate and phase change layer. However, the '556 (Depuydt) reference discloses a dielectric (interface) layer between the substrate and phase change layer which may be formed to a thickness of 5 to 200nm. Applicant claims a first interface layer up to 100nm and second interface layer up to 100nm. Applicant's combined interface thickness can be from 15nm to a 200nm maximum, which is encompassed by the range disclosed in the '556 reference. While the reference does not disclose two layers, two interface layers of the same dielectric material (as disclosed by applicant) would yield a single layer of the material, i.e. one 200nm layer of the material is equivalent to two 100nm layers of the material.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4, 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,051,340.

The reference discloses the method of manufacturing an optical recording medium using a stamper produced by etching a phase-change material on a substrate. The phase change material may be Te, Sb, Ge, Sn In, etc. and combinations of these elements. See col. 4. The layer may be formed in the claimed thickness range. See col. 4. The phase change material is exposed in a

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pattern (to form pits and grooves), developed with an alkali, nickel-plated, and formed into a stamper. See Examples.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,051,340.

The reference discloses the method of manufacturing an optical recording medium using a stamper produced by etching a phase-change material on a substrate. The phase change material may be Te, Sb, Ge, Sn In, etc. and combinations of these elements. See col. 4. The layer may be formed in the claimed thickness range. See col. 4. The layer may be formed of Sn-Ge-Sb. See Example 6. It is recognized that the specific formula for the alloy is not given. However, it would have been obvious to one of ordinary skill in the art to vary the amounts of the elements in the alloy to provide the optimal recording results.

Claims 5, 8-11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,051,340 in view of US 6,030,556.

The '340 reference discloses the master/stamper and method of manufacturing as described in the above 102 rejection. It is recognized that the reference does not specify an interface layer or protective layer on either side of the phase-change mask layer. However, the '556 reference shows

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that it is known to provide a dielectric and cap layer on either side of the mask layer when forming a stamper. The layers are of the same thickness as claimed. See col. 7-8. Therefore, it would have been obvious to one of ordinary skill in the art to include these layers in the '340 medium. One would be motivated by the reasoned expectation of obtaining the improved recording properties.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,051,340 in view of US 4,732,844.

The '340 reference discloses the master/stamper and method of manufacturing as described in the above 102 rejection. It is recognized that the reference does not disclose an interface comprising a AZO material. However, the '844 reference shows that including a AZO interface layer is known. See col. 4, l 26. Therefore, it would have been obvious to one of ordinary skill in the art to include such an interface layer in the '340 medium. One would be motivated by the reasoned expectation of obtaining a resist sensitive to the specific wavelengths of light disclosed in the '844 reference.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,051,340 in view of JP 06-060440.

The '340 reference discloses the master/stamper and method of manufacturing as described in the above 102 rejection. It is recognized that the reference does not disclose a protective layer formed of PMMA. However, the '440 reference disclose the use of protective layers with phase-change mask layers which may be formed of PMMA. See [0010]. Therefore, it would have been obvious to one of ordinary skill in the art to include such a layer for the protective properties provided.

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Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,051,340 in view of US 6,709,801.

The '340 reference discloses the master/stamper and method of manufacturing as described in the above 102 rejection. It is recognized that the reference does not disclose a heat sink layer on the side of the mask layer opposite the exposure light. However, the '801 reference shows that it is well-known to employ a heat sink layer when recording with phase-change materials. See col. 22 for materials and thickness. Therefore, it would have been obvious to one of ordinary skill in the art to include a heat sink layer in the '340 medium. One would be motivated by the reasoned expectation of obtaining the improved sensitivity disclosed in the '801 reference.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth E. Mulvaney whose telephone number is 571-272-1527. The examiner can normally be reached on Monday-Friday 9am-5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth E. Mulvaney/

Primary Examiner, Art Unit 1794